Fine Dining in the Winter Forest - by Jim Saunders, Miramichi Naturalists' Club

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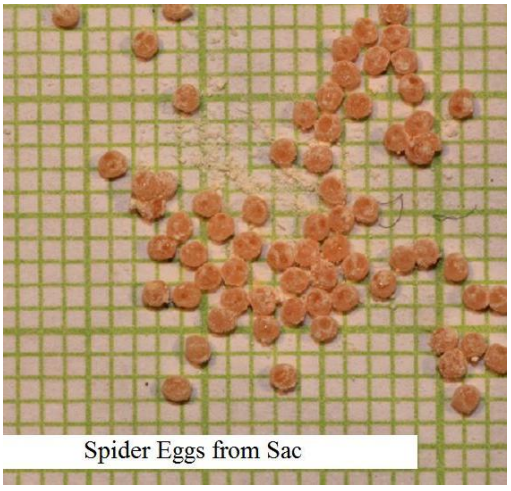
How do our feathered friends that are not close to feeders, survive when the coldest winter nights arrive? To find out I went to the Internet and searched on "Black-capped Chickadees and winter foraging". This bird appears to be on of the most studied in North America and it turns out that they have developed several strategies for survival during the winter.

"To increase energy intake, they spend a large percentage of the daylight hours foraging; to reduce energy loss overnight, they roost in cavities and other protected locations and become hypothermic (Chaplin 1974, Odum 1942). Even with these strategies, Chickadees may lose up to 10% of their body weight overnight (Chaplin 1974, 1976)." This was from a study by Margaret C Brittingham and Stanley A. Temple from the University of Wisconsin in response to the question "Does Winter Bird Feeding Promote Dependency?". Their conclusion was "We did not find chickadees that used feeders in the past, and therefore have spent less time foraging away from feeders, were less able to survive on a diet of natural food than chickadees that had spent all their time foraging away from feeders....." They caution against generalizing beyond the Chickadee or other resident species because an over-wintering migratory bird would probably be more dependent on a feeder because of lack of familiarity with the area. An interesting statistic from this study was that the food from feeders accounted for 21% of the Chickadee's daily requirement.

Another interesting discovery by Tammie J. Martinson and David J. Flaspohler of Michigan Technological University was that there is increased predation on overwintering arthropods in trees that are near feeders. From their study "Winter bird feeding and localized predation on simulated bark-dwelling arthropods" : "Takekawa et al. (1982) provide a review of avian predation on destructive forest insects and the role of biological control. They discuss management approaches to increase densities of insectivorous birds (e.g., providing nestboxes, leaving snags, or implementing silvicultural practices) as an alternative to pesticides in areas with forest pests. The use of winter bird feeders as an alternative form of arthropod pest control warrants further investigation."

Spider Egg Sac



Spider Eggs from Sac

In winter, insect and spider eggs are an important part of their diet. The spider eggs in the photo are approximately 1 millimeter in diameter. A find like this for a Chickadee would supply a considerable part of its daily food requirement. Tree and shrub seeds can account for about one-half of their intake. Also in winter they will forage fat from animal carcasses. In good weather they store food in denser stands of trees deeper in the forest for use in very stormy and/or cold weather. It is estimated that they must consume their body weight each day to maintain their 107 degree F body temperature. Body weight is between 11 an 12 grams (less than one-half ounce). To distinguish males from females, look at the black bib - the male has a larger bib than the female. This interesting tidbit courtesy of "The Virtual Nature Trail at Penn State Kensington".

Spiders Hibernating beneath White Birch Bark

While out in the woods in late December, out of curiosity I looked under the outer bark of a white birch to see what might be overwintering there. I saw a few spiders along with some other hibernators. I talked to Dave McLeod about going out and collecting samples under white birch bark in some different forest areas. We have collected an interesting variety of samples so far and they most likely make up part of Chickadees' winter diet. Dave is identifying the samples in preparation for a presentation at the Naturalists' Club meeting in May.